

2. Rejections under 35 U.S.C. §112, 1<sup>st</sup> Paragraph

This rejection has been addressed by deleting claims 34 and 35, deleting Fig. 15, amending the specification on page 5, line 21 to page 6, line 2, deleting the added sentence on page 3, between lines 24 and 25, and changing the term "substructure" to --residual area base- in claims 24, 25 and 28-33, as supported on page 6, lines 7-8, as required in item 6 on pages 3-4 in the Official Action dated April 13, 2001 and the Advisory Action dated July 19, 2001.

3. Rejection of claims 1-18, 20-22, 24-25 and 28-36 under 35 U.S.C. 112, 2<sup>nd</sup> Paragraph

This rejection has been address by canceling claims 34 and 35. Claims 1, 8, 9, 20, 24 and 25 have been previously amended in the Applicant's response of August 13, 2001.

4. Rejection of Claims 24-25 and 28-35 Under 35 U.S.C. §102(b) in view of U.S. Patent No. 2,210,923 (Jacquerod) or Under 35 U.S.C. §103(a) in view of the Jacquerod Patent and U.S. Patent No. 4,972,323 (Cauwet)

Reconsideration of the application is respectfully requested on the grounds that the Jacquerod and Cauwet patents fail to disclose or suggest a printing plate with an engraved residual area base, characterized in that the residual area base is meander-shaped or extends at least in partial areas parallel to a direction of said at least one line, as now recited in claim 24. In particular, "substructure" has been replaced by --residual area base - which refers to the base of the residual area and not to the flanks.

*R if you're trying to get around by saying the flanks don't count see cl. 25 unclear*

Instead, Jacquerod grains the bottoms of the intaglio lettering by an etching process. The plate "... is inked lightly if fine stippling is desired in the bottoms and heavily inked when coarse stippling is desired. The plate is then etched until the acid breaks the ink down and the bottoms of the incisions are formed in a stippled-effect design." (Page 2, col. 1, lines 24-29). The residual area bases of Jacquerod are random patterns of dimples in a stippled pattern **11a** (Page 1, Col. 1, lines 43-46; Page 2, Col. 1, lines 40-41, 48-49) as seen in Figs. 1 and 3. Also, the Examiner is directed to Merriam-Webster's on-line dictionary which defines "meander" as a winding path or course, especially a labyrinth. Random dimples cannot be

said to form a "path" or "labyrinth" since it is not clear which dimple would be the succeeding dimple in a path, or which dimple was the preceding dimple in a path.

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The present invention does not involve etching to produce a random stippled-effect pattern but by engraving lines in the residual area base having a specific, non-random, meandering or partially straight lines, *i.e.*, depressions engraved "in the form of a line," as recited in claim 24. As seen in Fig. 4, a contour (engraved) line is first made (#9) into the plate. Because of the size of the tool 14, the tool cannot completely remove the entire area with one pass and a residual area 16 is left. This residual area is removed by engraving in either a meander shape (Fig. 5(b)) or in a direction parallel to the contour lines (Fig. 5(c)) which defines the residual area base. The roughness is based on the offset of the tool (Figs. 6(b) and (c)). Jacquerod teaches a random pattern produced by stippling using an etching technique and does not have a residual area base having a specific shaped, *i.e.* meandering or partially straight lines using an engraving technique.

} doesn't matter

The Cauwet patent does not include any specific teachings concerning engraving meandering or partially straight residual area bases in a linearly engraved depression, and therefore could not have motivated the ordinary artisan to modify the teachings of Jacquerod to obtain the claimed invention, particular since Cauwet is not concerned with the manufacture of printing or embossing plates of the type disclosed by Jacquerod, but rather with the engraving of small ornamental or utility objects such as medals, jewelry or portraits.

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In fact, Jacquerod teaches against mechanically placing a pattern onto the residual area base using a machine, since according to Jacquerod, ". . . *such mechanical treating of the plate is very expensive. It requires the labor of a skilled engraver who is required to put in many hours of work to cross hatch even a small area . . .*" (Page 1, col. 1, lines 20-24). The Jacquerod and Cauwet patents have different objectives, and none discloses or even suggests the claimed residual area base engraved into said at least one depression, characterized in that the residual area base is meander-shaped or extends at least in partial areas parallel to a direction of said at least one line.

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The claimed residual area base arrangement, in which meandering or partially straight lines are engraved into linearly engraved structures, lends itself to numerical control of plate formation, and is clearly distinguishable from the random residual area base arrangement of Jacqueros. Moreover, the Cauwet patent includes no suggestion, either implied or expressed, that would have led one of ordinary skill in the art to modify the Jacqueros patent to include such structures.

Because Jacqueros does not teach the claimed inclusion of engraved meandering or partially linear residual area bases in engraved depressions that are "in the form of a line," Jacqueros does not anticipate the claimed invention, and since Cauwet does not include any teachings that would have motivated the ordinary artisan to modify the plates of Jacqueros to include such meandering or partially linear residual area bases, it is respectfully submitted that the rejections of claims 23-35 and 28-35 under 35 U.S.C. §102(b) and §103(a) are improper and should be withdrawn.

6. Rejection of Claims 1-3, 5-11, 14, 16-18, 20 and 36 Under 35 U.S.C. §103(a) in view of U.S. Patent No. 4,949,270 (Shima)

This rejection is respectfully traversed on the grounds that the method of Shima does not include the step of producing at least one depression in the form of at least one continuous line, the line defining an outline and a limited partial area of the surface, and an edge of the partial area defining a desired contour, as now recited in claim 1.

According to the Examiner, this feature is suggested by Figs. 13 and 16 of Shima. However, while Figs. 13 and 16 of Shima and the accompanying description suggest that it is known in the prior art to remove a predetermined area or "hollowing out" by moving the engraving tool along adjacent paths, there is no disclosure to suggest the step of producing at least one depression in the form of a line, the line defining both an outline and a partial area, an edge of the partial area defining a desired contour. As described in col. 1, lines 13-15 and 22-25, Shima teaches "*Machining (pocket machining) for hollowing out the interior of a profile outline...In spiral cutting, the interior of the profile outline is machined by a moving*



*tool along offset paths each inwardly offset a predetermined amount from the profile outline [see Fig. 13(c)]*". Thus, Shima is concerned with "hollowing out" a profile outline and a path that is "offset" a predetermined amount from the profile outline. According to the Office Action of April 13, 2001, on page 10, lines 3-5, Shima teaches a tool path that is "...at least partially 'contour-parallel' to the desired contour 1...". That is, Shima teaches tool paths that are parallel to the desired contour (i.e. outline), thus Shima cannot be said to define the outline on the plate in the form of a line since Shima's lines are "contour-parallel" to the desired contour.

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Because Shima teaches displaying the profile outline or contour on a display screen of a computer (Col. 1, lines 62-65; Col. 2, lines 45-46; Fig. 1) then hollowing out the interior of the profile outline, Shima cannot be said to define an outline on the surface of the embossing plate by using a tool to produce a depression in the form of a line. Instead, Shima successively positions a curser and inputs its coordinates at selected points on the display screen. The tool path is calculated by a computer program with the starting and end points, i.e., their coordinates, which are manually predetermined or set in order to hollow out the interior of the profile or contour displayed on the screen where the tool is offset from the outline. The Shima patent actually concerns so-called "pocket machining" for hollowing out the interior of the profile of a workpiece rather than engraving of printing or embossing plates. Shima is not concerned with micro-engraving to produce high-quality printed products, and Shima does not first define a desired outline on the plate by using a tool to produce at least one depression in the form of a line, the line defining a partial area, and an edge of the partial area defining a desired contour, as now recited in claim 1.

The present invention is concerned with a method for producing embossing plates, in particular steel intaglio printing plates for producing high-quality printed products, such as bank notes or identification cards. This is done by defining a desired contour and outline, and calculating a tool track in which an engraving tool must move to engrave the defined contour and outline on the embossing plate. Tool tracks are determined such that the engraving tool 14 is guided along the desired outline so that the desired contour lines remain in tact, as seen

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in Fig. 4, a tool track 13 is calculated which defines a contour 9.

Because Shima does not teach or even suggest the claimed the step of producing at least one depression in the form of at least one line which defines an outline and a limited partial area of the surface, and an edge of the partial area defining a desired contour, it is respectfully submitted that the rejection of claims 1-3, 5-11, 14, and 16-20 under 35 U.S.C. §102(b) is improper and should be withdrawn.

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6. Rejection of Claims 4, 12, 13, and 15 Under 35 U.S.C. §103(a) in view of U.S. Patent Nos. 4,949,270 (Shima) and 4,972,323 (Cauwet)

This rejection is respectfully traversed on the grounds that the Cauwet patent fails to disclose or suggest the step of calculating a tool path by determining the outer contour and the desired depth of an area to be engraved, as claimed, so that the area enclosed by the outer contour can be engraved automatically and without specifically determining coordinates for the tool path. Instead, Cauwet specifically teaches renewal of engraving depth control signals "with each path," in a manner that appears to be similar to that of Shima but that is contrary to the method of the present invention.

Because Cauwet does not include any teachings that would have motivated the ordinary artisan to rely on the outer contour and desired depth when implementing a method of the type disclosed in Shima, it is respectfully submitted that the rejection of claims 4, 12, 13, and 15 under 35 U.S.C. §103(a) is improper and should be withdrawn.

7. Rejection of Claims 21 and 22 Under 35 U.S.C. §103(a) in view of U.S. Patent No. 4,949,270 (Shima), 4,972,323 (Cauwet), and 2,210,923 (Jacquerod)

This rejection is respectfully traversed on the grounds that the Jacquerod patent, like the Cauwet and Shima patents, fails to disclose or suggest the claimed step of calculating a tool path by determining the outer contour and the desired depth of an area to be engraved, which has the advantage that the area enclosed by the outer contour can be engraved automatically and without specifically determining coordinates for the tool path, and further

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on the grounds that the ordinary artisan would not have thought to combine a printing or embossing plate engraving method of the type disclosed by Jacqueroed with the workpiece forming method of Shima, and the decorative article engraving method of Cauwet.

Because neither Cauwet nor Jacqueroed includes any teachings that would have motivated the ordinary artisan to rely on the outer contour and desired depth when implementing a method of the type disclosed in Shima, it is respectfully submitted that the rejection of claims 4, 12, 13, and 15 under 35 U.S.C. §103(a) is improper and should be withdrawn.

With respect to newly added claims 37-41, neither Shima, Jacqueroed nor Cauwet discloses or suggests, whether considered individually or in any reasonable combination, taking the width of the tool into account before forming the contour or depression, as recited in claims 37, 40 and 41, choosing the spacing between the tool tracks, as recited in claims 38 and 40, and forming a second depression to define a second contour and second limited area, the tool track in the second limited area being at a second penetration depth, as recited in claims 39 and 40. It is respectfully submitted that these claims are also allowable.

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Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

BACON & THOMAS, PLLC

A handwritten signature in black ink, appearing to read 'By ST' followed by a stylized flourish.

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Date: October 2, 2001

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APPENDIX B

(Marked-Up Copy Of Amended Claim(s))

1. (Three Times Amended) A method for producing an embossing plate having a surface with at least one depression in the form of at least one continuous line brought into the surface of the embossing plate, characterized in that the at least one line defines an outline and a limited partial area of the surface, an edge of the partial area defining a desired contour, and a tool track located within the desired contour being determined from the desired contour and a predetermined desired depth determining a penetration depth of an engraving tool, the engraving tool being controlled along said track such that a material of said partial area is removed within the desired contour at the predetermined desired depth.

24. (Three Times Amended) An embossing or intaglio printing plate having a surface with at least one engraved depression in the form of a line, said at least one depression having flanks, a bottom, and a [substructure] residual area base engraved into said at least one depression, a width of said [substructure] residual area base being smaller than a width of the at least one depression, characterized in that the [substructure] residual area base is meander-shaped or extends at least in partial areas parallel to a direction of said at least one line.

25. (Three Times Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base is present on the bottom of the at least one depression, on at least one of the flanks of the at least one depression, or on both the bottom and the at least one of the flanks of the at least one depression.

28. (Twice Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base defines a roughness.

29. (Twice Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base is incorporated in the form of characters, pictures, or patterns.



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30. (Twice Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base represents machine-readable information.

31. (Twice Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base is executed in the form of grooves.

32. (Twice Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base is brought in with the aid of a laser beam.

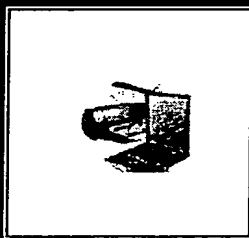
33. (Twice Amended) The embossing or intaglio printing plate of claim 24, characterized in that the [substructure] residual area base is brought in with a mechanical chisel.



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2 entries found for **meander**.

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meander[1,noun]    ▲    Go  
meander[2,intransitive verb]    ▼

Main Entry: **1 me·an·der** 🗨

Pronunciation: mE- 'an-d&r

Function: *noun*

Etymology: Latin *maeander*, from Greek *maiandros*, from *Maiandros* (now *Menderes*), river in Asia Minor

Date: 1576

1 : a winding path or course; *especially* : **LABYRINTH**

2 : a turn or winding of a stream

- **me·an·drous** 🗨 /-dr&s/ *adjective*

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### Pronunciation Symbols

\&\ as a and u in abut  
\&\ as e in kitten  
\&r\ as ur/er in further  
\a\ as a in ash  
\A\ as a in ace  
\&l\ as o in mop  
\au\ as ou in out

\e\ as e in bet  
\E\ as ea in easy  
\g\ as g in go  
\i\ as i in hit  
\I\ as i in ice  
\j\ as j in job  
\ng\ as ng in sing

\o\ as aw in law  
\oi\ as oy in boy  
\th\ as th in thin  
\th\ as th in the  
\u\ as oo in loot  
\u\ as oo in foot  
\y\ as y in yet

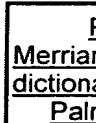
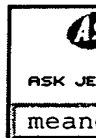
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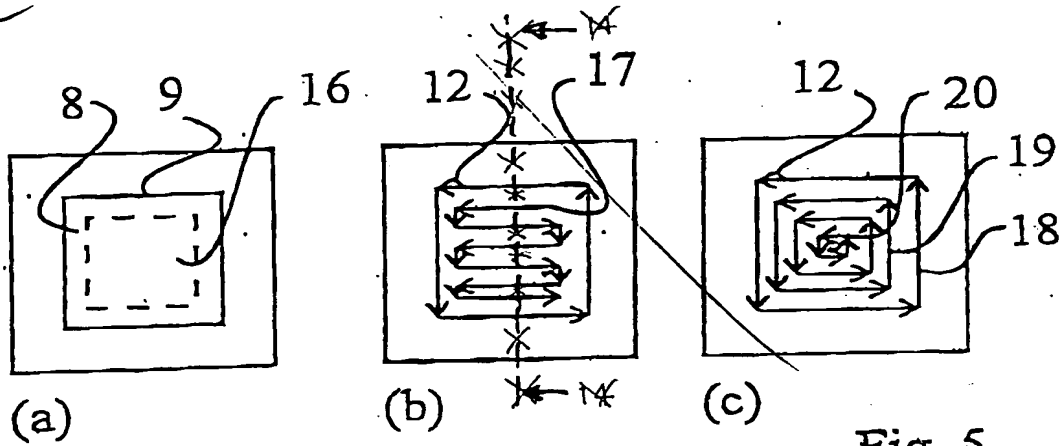


Fig. 5

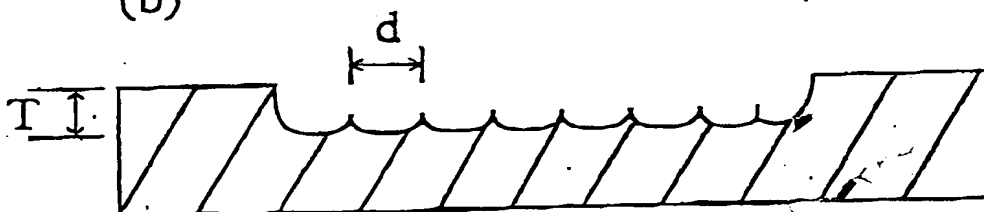
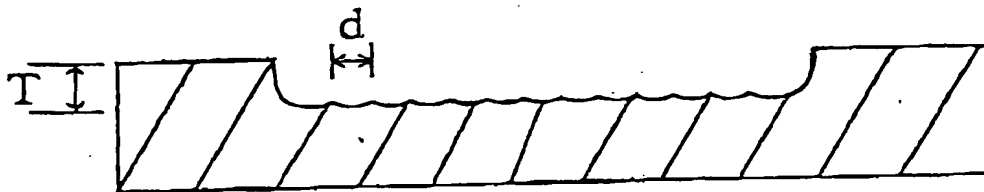
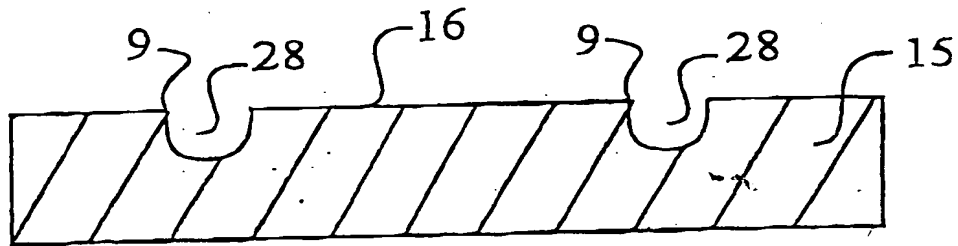


Fig. 6

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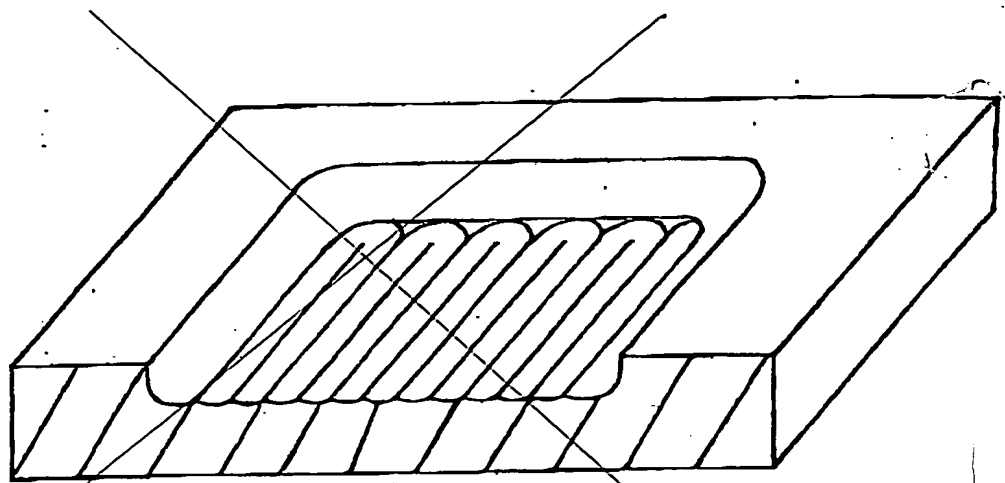


Fig. 14

CANCEL FIG. 14